

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Commissioner for Patents
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February 23, 2007

APPEAL BRIEF

Dear Sir:

Attached herewith is an Appeal Brief pursuant to 35 U.S.C. §134 and 37 C.F.R. §41.37 for the above-identified patent application in support of a Notice of Appeal filed with the United States Patent and Trademark Office on August 25, 2006.

TABLE OF CONTENTS

I.	REAL PARTY IN INTEREST.....	3
II.	RELATED APPEALS AND INTERFERENCES	3
III.	STATUS OF THE CLAIMS	3
IV.	STATUS OF AMENDMENTS	3
V.	SUMMARY OF THE CLAIMED SUBJECT MATTER	3
VI.	GROUND OF REJECTION TO BE REVIEWED ON APPEAL	5
VII.	ARGUMENTS	6
VIII.	CONCLUSION	11
IX.	CLAIM APPENDIX.....	13
X.	EVIDENCE APPENDIX	18
XI.	RELATED PROCEEDINGS APPENDIX.....	19

I. REAL PARTY IN INTEREST

The real party in interest in the above-entitled application is Koninklijke Philips Electronics N.V., Eindhoven, NL.

II. RELATED APPEALS AND INTERFERENCES

The undersigned attorney/agent, the appellant, and the assignee are not aware of any related appeals or interferences that would directly affect, or be directly affected by, or have a bearing on the Board's decision in this pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-29 are pending and are all on appeal. Claims 1-29 stand rejected. Claims 1, 23, 26, 28, and 29 were amended during prosecution.

IV. STATUS OF AMENDMENTS

No after final amendments have been submitted.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Claim 1

Claim 1 is directed towards a system that includes a light source in a portable hand-held device, such as a light source in a remote control or other suitable device. The system also includes a light detector that detects light from the light source and a control unit that receives image data from the light detector. The control unit detects a position of the hand-held device relative to a position of a user of the hand-held device and a feature of a display is controlled through use of the detected position of the hand-held device relative to the position of the user. Additionally, a change of the feature corresponds to a movement of the movable hand-held device relative to the user. (*See, inter alia*, page 7, lines 4-7; page 7, lines 11-12; page 8, lines 9- 20; page 11, line 13- page 13, line 2; and Fig. 1, reference numerals 101, 103, 111, and 121).

Claim 23

Claim 23 is directed towards a system that includes two or more portable hand-held devices that include light sources. The system additionally includes a light detector that detects light from at least one of the light sources and a control unit that receives image data from the light detector. The control unit detects the positions for the two or more devices and transmits the positions to separately control two or more features on a display. A change of a feature corresponds to a movement of at least one of the movable hand-held devices relative to a user of the at least one movable hand-held device. (*See, inter alia*, page 7, lines 4-7; page 7, lines 11-12; page 8, lines 9- 20; page 10, lines 8-14; page 11, line 13- page 13, line 2; and Fig. 1, reference numerals 101, 103, 111, and 121).

Claim 28

Claim 28 is directed towards a system that includes a light source in a movable hand-held device, such as a remote control device with a light emitting diode. A light detector detects light from the light source, and a control unit receives image data from the light detector. The control unit detects the position of the hand-held device relative to the position of a user carrying the hand-held device and translates the position to control a feature on a display, such that a change of the feature corresponds to a movement of the movable hand-held device relative to the user. (*See, inter alia*, page 7, lines 4-7; page 7, lines 11-12; page 8, lines 9- 20; page 11, line 13- page 13, line 2; and Fig. 1, reference numerals 101, 103, 111, and 121).

Claim 29

Claim 29 is directed towards a system that includes a light source in a movable hand-held device, a light detector that detects light from the light source, and a control unit that receives image data from the light detector. The control unit detects the position of the hand-held device in three dimensions from the image data and uses the position to control a feature on a display. Additionally, a change of the feature corresponds to a movement of the movable

hand-held device relative to a user of the hand-held device. (*See, inter alia*, page 7, lines 4-7; page 7, lines 11-12; page 8, lines 9- 20; page 11, line 13- page 13, line 2; page 16, lines 3-8; Fig. 1, reference numerals 101, 103, 111, and 121; and Fig. 3).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-7 are unpatentable under 35 U.S.C. §103(a) over Girod (US 6,677,987) in view of Livits (US 5,661,505).

Whether claims 8-9 are unpatentable under 35 U.S.C. §103(a) over Girod in view of Livits and further in view of Lin (US 6,346,933).

Whether claim 10 is unpatentable under 35 U.S.C. §103(a) over Girod in view of Livits and further in view of Kim, *et al.* (US 6,424,335).

Whether claims 11-16, and 22 are unpatentable under 35 U.S.C. §103(a) over Girod in view of Livits and further in view of Fitts (US 5,175,601).

Whether claims 17-21 are unpatentable under 35 U.S.C. §103(a) over Girod in view of Livits and further in view of Arita, *et al.* (US 6,188,388).

Whether claim 23 is unpatentable under 35 U.S.C. §103(a) over Rice, *et al.* (US 5,973,672) in view of Girod and further in view of Livits.

Whether claims 24-26 are unpatentable under 35 U.S.C. §103(a) over Rice, *et al.* in view of Girod and further in view of Livits and still further in view of Kim, *et al.*

Whether claim 27 is unpatentable under 35 U.S.C. §103(a) over Rice, *et al.* in view of Girod and further in view of Livits and still further in view of Kim, *et al.* and still further in view of Fitts.

Whether claim 28 is unpatentable under 35 U.S.C. §103(a) over Girod in view of Bowling (US 5,746,261) and further in view of Livits.

Whether claim 29 is unpatentable under 35 U.S.C. §103(a) over Girod in view of McTernan, *et al.* (US Patent Application No. 2001/0056477) and further in view of Livits.

VII. ARGUMENTS

A. Rejection of Claims 1-7 Under 35 U.S.C. §103(a)

Claims 1-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of Livits. Reversal of this rejection is respectfully requested, as the cited references, alone or in combination, fail to disclose, teach, or suggest each and every element as recited in these claims.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. (MPEP §2142) (Emphasis added). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 1

The subject claim is directed towards a hand-held mobile device to control a feature on a display. To that end, claim 1 requires that a control unit *detect the position of a hand-held device relative to a position of a user of the movable hand-held device... wherein a change of a feature corresponds to a movement of the movable hand-held device relative to the user*. The combination of Girod and Livits fails to disclose, teach, or suggest these claimed elements.

Girod is directed towards tracking movement of a light source. Girod teaches that movement of the light source can be tracked within digital video data and used to control

computer-based applications.¹ The Examiner concedes that Girod fails to disclose, teach, or suggest the aforementioned claimed aspects, and cites Livits in an attempt to make up for the deficiencies of Girod with respect to claim 1.

Livits is directed towards a single-handed keyboard that includes functionality of conventional QWERTY keyboards. This is accomplished by providing multi-function keys, where particular functions are enabled by selectively positioning the keyboard relative to a surface upon which the keyboard rests. With more specificity, the keyboard of Livits can be “rocked” in three different positions, where position of the keyboard dictates functionality of keys on the keyboard when invoked by a user. Thus, if the keyboard is placed in a first position relative to a surface, then a key on the keyboard will be assigned a first function. If the keyboard is placed in a second position relative to the surface, then the key on the keyboard will be assigned a second function. Similarly, if the keyboard is placed in a third position relative to the surface, then the key on the keyboard will be assigned a third function.² In summary, functions are assigned to keys on the keyboard depending upon a position of the keyboard relative to a surface.

It is readily apparent, then, that Livits fails to disclose, teach, or suggest a control unit that *detects the position of a hand-held device relative to a position of a user of the movable hand-held device... wherein a change of a feature corresponds to a movement of the movable hand-held device relative to the user.* The portion of Livits cited by the Examiner as disclosing these aspects is as follows:

In order to achieve the above objects, as well as others which will become apparent hereafter, a single-hand controlled input device comprises a movable housing having remote and proximate portions relative to the position of the user of the input device.³

¹ Girod, col. 1, lines 41-50

² Livits, Abstract and Figs. 2A-2C

³ Livits, col. 3, lines 18-23

This portion of Livits, rather than disclosing the claimed aspects, simply describes the structure of the housing, stating that in operation the housing has a first end that is remote (or further) from the user and a second end that is proximate (or close) to the user. Livits says nothing about detecting position of the housing relative to a user, much less a change of feature corresponding to movement of the housing relative to the user. In contrast, as described above, functions of keys on a keyboard of Livits change relative to a position of the keyboard with respect to a surface without regard to a position of a user. Thus, for instance, pivoting the housing of the keyboard to a first position relative to a desk or other supporting structure will result in a key having a particular functionality regardless of a position of the user with respect to the housing.

As the cited references fail to disclose or suggest each and every feature of the present claims, it is submitted that the Examiner has failed to establish a *prima facie* case of obviousness. Accordingly, reversal of the rejection of claim 1 and all claims that depend therefrom is respectfully requested.

B. The Rejection of Claims 8 and 9 Under 35 U.S.C. §103(a)

Claims 8-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of Livits and further in view of Lin. Claims 8 and 9 depend upon claim 1, which is believed to be in condition for allowance. Accordingly, reversal of this rejection is respectfully requested.

C. The Rejection of Claim 10 Under 35 U.S.C. §103(a)

Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of Livits and further in view of Kim, *et al.* This claim is believed to be allowable at least by virtue of its dependence from claim 1, and therefore this rejection should be reversed.

D. The Rejection of Claims 11-16 and 22 Under 35 U.S.C. §103(a)

Claims 11-16 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of Livits and further in view of Fitts. Reversal of this rejection is respectfully requested, as these claims are believed to be allowable at least by virtue of their dependencies from claim 1.

E. The Rejection of Claims 17-21 Under 35 U.S.C. §103(a)

Claims 17-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of Livits and further in view of Arita, *et al.* As these claims depend from claim 1, which is believed to be in condition for allowance, this rejection should be reversed.

F. The Rejection of Claim 23 Under 35 U.S.C. §103(a)

Claim 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Rice, *et al.* in view of Girod and further in view of Livits. Claim 23 recites, *inter alia*, *a control unit that detects positions for two or more movable hand-held devices in at least two dimensions from image data from at least one light detector and translates the positions for each of the two or more movable hand-held devices to separately control two or more respective features on a display, and wherein change of at least one of said features corresponds to a movement of at least one of said two or more movable hand-held devices relative to a user of said at least one of said two or more movable hand-held devices.* The Examiner notes that Rice, *et al.* and Girod fail to disclose these elements, and again cites Livits. As described above, however, Livits teaches that functionality of a key on a keyboard is based upon a position of the keyboard with respect to a surface, such as a desk, without regard for a position of a user of the keyboard. Accordingly, reversal of this rejection and allowance of this claim (and claims that depend therefrom) is respectfully requested.

G. The Rejection of Claims 24-26 Under 35 U.S.C. §103(a)

Claims 24-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Rice, *et al.* in view of Girod and further in view of Livits and still further in view of Kim, *et al.* Reversal of this rejection is respectfully requested, as claims 24-26 are believed to be allowable at least by virtue of their dependencies from claim 23.

H. The Rejection of Claim 27 Under 35 U.S.C. §103(a)

Claim 27 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Rice, *et al.* in view of Girod and further in view of Livits and still further in view of Kim, *et al.* and still further in view of Fitts. As claim 23 is believed to be in condition for allowance, and claim 27 depends therefrom, reversal of this rejection is respectfully requested.

I. The Rejection of Claim 28 Under 35 U.S.C. §103(a)

Claim 28 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of Bowling and further in view of Livits. Claim 28 requires that the control unit detect the position of a handheld device relative to a position of a user carrying the hand-held device. The Examiner concedes that Girod fails to teach or suggest this limitation and accordingly cites Bowling.

Bowling is related to operation of a stump cutter by way of wireless communications. If a user of the stump cutter becomes too close to certain portions of the stump cutter, the stump cutter will shut down.⁴ Additionally, Bowling discloses providing multiple individuals with small transmitters, such that if any of such individuals becomes within a distance of the stump cutter the stump cutter is disabled.⁵ Accordingly, Bowling teaches detection of a position of a transmitter relative to the stump cutter, but fails to disclose detection of a hand-held device relative to a position of a user carrying the device.

⁴ Bowling, col. 4, lines 37-46

⁵ Bowling col. 11, lines 16-32

The Examiner additionally cites Livits as disclosing that a change of a feature on a display corresponds to a movement of the movable hand-held device relative to the user as required by claim 28. As described above, Livits fails to disclose, teach, or suggest such elements.

Moreover, it is submitted that there is a lack of motivation in connection with combining Girod, Bowling, and Livits. More specifically, one skilled in the art would not turn to the safety system used in connection with a stump cutter to modify a single-hand keyboard (as shown in Livits) or a system for tracking light to control a computer application (as disclosed in Girod).

Accordingly, for at least the reasons described above, the rejection of claim 28 should be reversed.

J. The Rejection of Claim 29 Under 35 U.S.C. §103(a)

Claim 29 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Girod in view of McTernan, *et al.* and further in view of Livits. The subject claim recites that *a change of a feature corresponds to a movement of a movable hand-held device relative to a user of the hand-held device*. McTernan, *et al.* is directed towards distribution of motion data over a network to a client device.⁶ The Examiner concedes that the combination of McTernan, *et al.* and Girod fails to disclose these claimed aspects, and again cites Livits. As noted above, however, Livits does not disclose, teach, or suggest that a change of a feature corresponds to a movement of a movable hand-held device relative to a user of the hand-held device as claimed. Accordingly, as the combination of references fails to disclose, teach, or suggest each and every aspect as claimed, the Examiner has failed to establish a *prima facie* case of obviousness, and therefore this rejection should be reversed.

⁶ McTernan, *et al.*, Abstract

VIII. CONCLUSION

In view of the foregoing, it is submitted that claims 1-29 distinguish patentably and non-obviously over the prior art of record, and reversal of the rejection of claims 1-29 is respectfully requested.

Respectfully submitted,

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IX. CLAIM APPENDIX

1. A system, comprising:
 - at least one light source in a movable hand-held device, the movable hand-held device being capable of sending control signals to a remotely controllable device;
 - at least one light detector that detects light from said light source; and
 - a control unit that receives image data from the at least one light detector, wherein the control unit detects the position of the hand-held device relative to a position of a user of the movable hand-held device in at least two dimensions from the image data from the at least one light detector and translates the position to control a feature on a display, wherein a change of said feature corresponds to a movement of the movable hand-held device relative to the user.
2. The system of claim 1, wherein the at least one light detector is a digital camera.
3. The system of claim 2, wherein the digital camera captures a sequence of digital images that include the light emitted by the hand-held device, the sequence of digital images transmitted to the control unit.
4. The system of claim 3, wherein the control unit comprises an image detection algorithm that detects the image of the light of the hand-held device in the sequence of images transmitted from the digital camera.
5. The system of claim 4, wherein the control unit maps a position of the detected hand-held device in the images to a display space for the display.

6. The system as in claim 5, wherein the mapped position in the display space controls the movement of a feature in the display space.
7. The system as in claim 6, wherein the feature in the display space is a cursor.
8. The system of claim 3, wherein the captured images are processed by the control unit for at least one other purpose.
9. The system of claim 8, wherein the at least one other purpose is selected from the group of teleconferencing, image transmission, and image recognition.
10. The system of claim 1, wherein said at least one light source is an LED.
11. The system of claim 1, wherein the at least one light detector comprises two digital cameras.
12. The system of claim 11, wherein the two digital cameras each capture a sequence of digital images that include the light emitted by the hand-held device, each sequence of digital images transmitted by each camera to the control unit.
13. The system of claim 12, wherein the control unit comprises an image detection algorithm that detects the image of the light of the hand-held device in each sequence of images transmitted from the two digital cameras.
14. The system of claim 13, wherein the control unit comprises a depth detection algorithm that uses the position of the light in the images received from each of the two cameras to determine a depth parameter from a change in a depth position of the hand-held device.

15. The system of claim 14, wherein the control unit maps a position of the detected hand-held device in at least one of the images from one of the cameras and the depth parameter to a 3D rendering in a display space for the display.
16. The system as in claim 15, wherein the mapped position in the display space controls the movement of a feature in the 3D rendering in the display space.
17. The system of claim 1, wherein the at least one light detector is at least one digital camera and the hand-held device comprises two light sources.
18. The system of claim 17, wherein the digital camera captures a sequence of digital images that include the light from the two light sources of the hand-held device, the sequence of digital images transmitted to the control unit.
19. The system of claim 18, wherein the control unit comprises an image detection algorithm that detects the image of the two light sources of the hand-held device in the sequence of images transmitted from the digital camera.
20. The system of claim 19, wherein the control unit determines at least one angular aspect of the hand-held device from the images of the two light sources.
21. The system of claim 20, wherein the control unit maps the at least one angular aspect of the hand-held device as detected in the images to a display space for the display.
22. The system of claim 1, wherein the light source emits at a wavelength that falls within the visible and infrared light spectrum.

23. A system comprising:

two or more movable hand-held devices, each hand-held device comprising at least one light source, at least one of the two or more movable hand-held devices being capable of sending control signals to a remotely controllable device,

at least one light detector detecting light from the at least one light source of each of the two or more hand-held devices; and

a control unit that receives image data from the at least one light detector, wherein the control unit detects the positions for each of the two or more movable hand-held devices in at least two dimensions from the image data from the at least one light detector and translates the positions for each of the two or more movable hand-held devices to separately control two or more respective features on a display, and wherein change of at least one of said features corresponds to a movement of at least one of said two or more movable hand-held devices relative to a user of said at least one of said two or more movable hand-held devices.

24. The system of claim 23, wherein the at least one light source of the two or more hand-held devices each turn on and off at a flashing frequency and emit light at a flashing wavelength.

25. The system of claim 24, wherein the flashing frequencies of the at least one light source of the two or more hand-held devices are different.

26. The system of claim 24, wherein the wavelengths of the at least one light source of the two or more hand-held devices are different.

27. The system of claim 26, wherein the flashing wavelength falls within the visible and infrared light spectrum.

28. A system, comprising:

at least one light source in a movable hand-held device, the movable hand-held device being capable of sending control signals to a remotely controllable device;

at least one light detector that detects light from said light source; and

a control unit that receives image data from the at least one light detector, wherein the control unit detects the position of the hand-held device relative to the position of a user carrying the hand-held device in at least two-dimensions from the image data from the at least one light detector and translates the position to control a feature on a display so that a change of said feature corresponds to a movement of the movable hand-held device relative to the user.

29. A system, comprising:

at least one light source in a movable hand-held device, the movable hand-held device being capable of sending control signals to a remotely controllable device;

at least one light detector that detects light from said light source; and

a control unit that receives image data from the at least one light detector, wherein the control unit detects the position of the hand-held device in three dimensions from the image data from the at least one light detector and translates the position to control a feature on a display, and wherein a change of said feature corresponds to a movement of the movable hand-held device relative to a user of the hand-held device.

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

None known to undersigned attorney/agent.